

博士論文審査結果報告
Report on Ph.D. / Doctoral Dissertation Defence

政策研究大学院大学
 教授 LEON-GONZALEZ, Roberto

審査委員会を代表し、以下のとおり審査結果を報告します。

On behalf of the Doctoral Thesis Review Committee, I would like to report the result of the Ph. D. / Doctoral Dissertation Defense as follows.

学位申請者氏名 Ph.D. Candidate	Rhoda Ejalu		
学籍番号 ID Number	PHD11102		
プログラム名 Program	政策分析プログラム Policy Analysis Program		
審査委員会 Doctoral Thesis Review Committee	主査 Main referee	LEON-GONZALEZ, Roberto	主指導教員 Main advisor
	審査委員 Referee	藤本 淳一 FUJIMOTO, Junichi	副指導教員 Sub advisor
	審査委員 Referee	池田 真介 IKEDA, Shinsuke	副指導教員 Sub advisor
	審査委員 Referee	園部 哲史 SONOBE, Tetsushi	博士課程委員会委員長 Chairperson of the Ph. D. Programs Committee
	審査委員 Referee	藤原 一平 FUJIWARA, Ippei (慶應義塾大学 教授 / Keio University)	外部審査員 Referee from outside institutions
論文タイトル Dissertation Title	Fiscal Sustainability and Monetary Policy in Uganda and Neighbouring countries ウガンダとその周辺諸国における財政の持続可能性と金融政策		
学位名 Degree Title	博士 (国際経済学) / Ph.D. in International Economics		
論文提出日 Submission Date of the Draft Dissertation	平成 28(2016)年 3 月 1 日	論文審査会開催日 Date of the Degree Committee Meeting	平成 28(2016)年 3 月 29 日
論文発表会開催日 Date of the Defense	平成 28(2016)年 3 月 29 日	論文最終版提出日 Submission Date of the Final Dissertation	平成 28(2016)年 8 月 22 日
審査結果 Result	合格 Pass		

1. 論文要旨 **Thesis overview and summary of the presentation**

The thesis has 5 chapters. The first one provides a background on fiscal sustainability and monetary policy in East African countries. The second one gives a literature review of fiscal and monetary policies.

The third chapter analyses the sustainability of public debt using non-linear cointegration techniques. This type of analysis has not been done for developing countries, and it is particularly appropriate because it allows for the fact that the response of policy makers to debt misalignments is different in expansions and recessions. That is, although it might be known to policy makers that measures for greater fiscal consolidation are needed, they are likely to implement them only when the economy is going well. Therefore, in this context non-linear cointegration techniques are more appropriate than the more commonly used linear cointegration techniques. However, the thesis finds that only Tanzania follows a sustainable fiscal path, suggesting that other countries such as Burundi, Kenya, Uganda and Rwanda need to take substantial fiscal and public expenditure reforms to achieve a sustainable path.

The fourth chapter analyses the impact of monetary policy in Uganda. The empirical analysis uses macroeconomic data on Uganda to estimate a so called cash-in-advance model, and vector autoregression models. The analysis finds that a positive shock to money supply hurts the economy, because agents anticipate the impact on inflation and therefore reduce economic activity. The analysis suggests that for monetary policy to become an effective policy instrument in Uganda, agents need to develop stable inflation expectations.

The last chapter puts together the main findings and stresses the potential policy implications of the analysis.

Ms. Ejalu gave a 1 hour presentation of her thesis, which was followed by questions and comments from the examination committee.

2. 審査報告 **Notes from the Doctoral Thesis Review Committee (including changes required to the thesis by the referees)**

The committee made a number of comments and suggestions, on issues such as details of the econometric methodology, placing the contribution in the existing literature, use of data, and details of the economic theory behind the estimated models. Ms. Ejalu has prepared a summary of the suggestions of the committee, and the subsequent revisions to the thesis, which I attach at the end of this report.

3. 最終提出論文確認結果 Confirmation by the Main Referee that changes have been done to the satisfaction of the referees

The revised thesis was sent to all the members of the review committee, and it was concluded that they were satisfactory.

4. 最終審査結果 Final recommendation.

I recommend that Ms. Ejalu be awarded the degree of PhD in International Economics.



Roberto Leon

Summary of revisions to the thesis prepared by Ms. Ejalu:

PhD Dissertation Comments

Thesis Title: “Fiscal Sustainability and Monetary Policy in Uganda and Neighboring Countries”

Submitted by: Rhoda Ejalu (PHD11102)

Main Advisor: Professor Roberto Leon-Gonzalez

Committee Members: Professor Tetsushi Sonobe, Professor Ippei Fujiwara ,
Professor Ikeda Shinsuke and
Professor Junichi Fujimoto

The Comments from each committee member and response are as follows:

Professor Ippei Fujiwara

- With regards to the comment on a *‘Broad Introduction’* also mentioned by Professor Sonobe. I rewrote the Introduction especially sections 1.1 and 1.2 that deal with the background information and Fiscal Policy plan for East African Countries respectively. This can be found on pages 1 through 7. The Introduction now primarily focusses on fiscal sustainability, fiscal policy and monetary policy analysis.

- The professor requested that I clarify the *‘ADF test results why negative signs’* referring to figures on ADF and KPSS results in table 3.1 on page 27. I included a footnote that explains why the results were negative. This can be found in footnote 2 under section 3.3 on methodology and empirical results PVBC concept on page 25.

- He also talked about *'cointegration between non- contemporaneous variables'* whether I could add up the data for every 5 years. I considered this but it would affect the sample size that would be too small. It was impractical for our case moreover it is not even clear which lag to use in such a scenario. So like most authors cited in the thesis who analyzed long run relationships between variables, I retained the cointegration results as presented. This has also been written under section 3.3 on page 26. The cointegration test results are presented in table 3.1 on page 27.

- Under the chapter on monetary policy section 4.2.1, professor Fujiwara wanted to know if the variable 'm' in the credit market equilibrium equation 8 on page 56 was money growth or in levels. He said he would feel better if 'm' indicated growth and not levels. Indeed the 'm' in equation indicates growth and not levels. I have put a footnote to this effect on the same page as a reminder to the readers.

- The professor requested that I *'explicitly report the linear error correction model'*. I did report the linear error correction model. In the revised version, the results were picked from the appendix and placed in chapter 3. Information on this can be found in section 3.3.3 on page 31 and the results in table 3.3 on page page 34.

- Last but not least there was a concern by the professor that the *'Bayesian VAR was not directly comparable with the CIA model'*. I understood the professor's concern and considered it, but due to data limitations I was unable to get a more precise and/or exactly directly comparable estimation of the Bayesian VAR to the CIA model. I have added a note of this limitation in the thesis on page 57.

Professor Junichi Fujimoto

- Professor Fujimoto indicated that *'It is unclear why it is the profits on loans to firms "net of the monetary injection" that is relevant here, instead of total profits on loans (note that the "zero profit condition" imposed here indeed yields financial intermediaries positive profits, $B_t = R_t X_t$). In fact, I am not even sure if it is necessary to impose any "zero profit condition" here as an additional constraint. So long as the loan interest rate is positive, financial intermediaries will lend as much as possible, hence $L_t = D_t + X_t$. Combining this with the fact that deposit and loan interest rates are equal in equilibrium; wouldn't we automatically obtain the same relationship as the "zero profit condition" stated here? I suggest clarification of this issue.'* My response is indeed the 'zero profit condition' arises not as a restriction in the model but as necessary condition for equilibrium. I have corrected the text in page 51 and indicated that as a result of the profit maximization, financial intermediaries have a profit equal to $R_t X_t$ in

equilibrium. I have clarified that this results from the other equilibrium conditions as suggested and removed the term ‘zero profit condition’ because it could be misleading.

- Professor Fujimoto pointed out that *‘Since the market for deposits (where households lend to financial intermediaries) and the market for loans (where financial intermediaries lend to firms) are different markets, in general there is no reason why the deposit and loan interest rates must be equalized in equilibrium. What needs to be argued is that in this particular model, any gap between these rates would lead to either infinite or zero demand for deposits by financial intermediaries, which would be inconsistent with market clearing (hence with equilibrium). The candidate skips all such argument and jumps on to conclude that these two rates are equal, which I think should be corrected.’* I have added a clarification that the two rates only become equal in equilibrium and explained the reason in page 51 as suggested.
- There was a general concern on *‘citation and referencing’*. I appreciate this concern and it had been rectified.
- He mentioned that the term *‘sector performance’* in the title of table 1.2 on page 7 can be confusing and suggested I use probably sector

composition. I changed the title and used sector composition instead of sector performance.

- Professor Fujimoto noticed a '*big difference in the prior and posterior mean of the last terms in table 4.2 on page 62*' I noticed that too and would like to clarify that these terms are the standard deviations of the error terms. It follows that after complex calculations of the dynamic model we would have a large variance in these variables. This has been mentioned on page 63.
- Professor Fujimoto asked why the '*cubic spline method in EViews*' used to interpolate the output growth numbers as mentioned on page 46 . I did use this method because of lack of quarterly Ugandan GDP data and it did fit my data well and gave the expected results. Figure 4.1 on page 47 shows the relationship between growth and inflation, lower growth coinciding with higher inflation and vice versa throughout the series. This is as expected for any economy and a huge success for my analysis.

Professor Ikeda Shinsuke

- One of the main concerns for the professor was on the fiscal side and specifically coming from the '*cointegration results and the relevance of the non-linear model analysis*'. I took his concern on board and realized I needed to explain the model further and better. So i reexamined and

explained section 3.3 on page 25. Section 3.3.2 on page 29, mentions some limitations of cointegration analysis. I added figures 3.4 and 3.5 on pages 36 and 37 respectively for clarity. I also would like to clarify that the terms used in the non linear model stand for the economic cycle and fiscal deficit and not fiscal sustainability. Therefore the non linear model is a short run tax adjustment model and deals with fiscal policy adjustment towards fiscal sustainability and should not be thought of as perhaps non linear fiscal sustainability.

- In addition the Johansen test is used to evaluate the hypothesis of linear cointegration. However, it is not designed to find non-linear cointegration. It is possible that the Johansen test fails to find linear cointegration in the presence of non-linear cointegration. Even in countries where I did not find linear cointegration with the Johansen test, when I use the non-linear smooth transition model, I find that the adjustment coefficients are significant in one-regime, and not in the other. Because this suggests that the dependent variable adjusts only in one regime, this is evidence of non-linear cointegration. Note however that in the non-linear model I do not interpret CV as a cointegration residual anymore. I construct CV simply as a measure of the budget deficit in previous years as mentioned on page 33.

- Professor Ikeda also mentioned that there is a fundamental misunderstanding of the model by the author, the model that is *a*

smooth transition model and NOT regime switching model. My response to this is it depends on how you mention it. An economic recession is different from an economic boom, similarly a rising deficit and falling deficit are two different regimes to us. The change from one regime to another is expected to or should transition smoothly to enhance fiscal policy adjustment and hence fiscal sustainability. I have clarified in the revised section 3.3.3.2 on page 38 to mention that the coefficients transition smoothly from one regime to another.

- In addition I would like to clarify that the '*impulse response graphs*' in figures 4.5 and 4.6 on pages 68 and 71 respectively are by no means intended to be identical. They are derived from different models using different software. I was rather more interested in the path a variable takes in the event of a given shock. An initial positive or negative response is therefore interpreted as that irrespective of the scale of the graph.

Professor Tetsushi Sonobe

- With regards to the comment on a '*Broad Introduction*' also mentioned by Professor Fujiwara. I rewrote the Introduction especially sections 1.1 and 1.2 that deal with the background information and Fiscal Policy plan for East African Countries respectively. This can be found on pages 1 through 7. The Introduction now primarily focusses on fiscal sustainability, fiscal policy and monetary policy analysis. The

introduction also includes the summary findings of the thesis on page 8.

- In order to ‘*emphasize the contribution of this thesis*’, the literature review sections 2.1 and 2.2 , from pages 14 to 17 summarize the studies of previous authors and mention the gaps and contribution of my thesis. I mention the contribution of my analysis in the conclusion on page 76 as well. I also mention in the conclusion that I have satisfactory answers to the questions the thesis seeks to answer in the beginning.
- Finally I would like to thank all the professors for their invaluable comments. I have got an even deeper understanding and conviction of my analysis the content of this thesis is enriched.